

Attachment  
14/1

-89-

SEQUENCE LISTING

(1) GENERAL INFORMATION:

(i) APPLICANT: REFF, Mitchell E.  
KLOETZER, William S.  
NAKAMURA, Takehiko

(ii) TITLE OF INVENTION: GAMMA-1 ANTI-HUMAN CD23 MONOCLONAL  
ANTIBODIES AND USE THEREOF AS THERAPEUTICS

(iii) NUMBER OF SEQUENCES: 35

(iv) CORRESPONDENCE ADDRESS:

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(E) COUNTRY: United States  
(F) ZIP: 22313-1404

(v) COMPUTER READABLE FORM:

(A) MEDIUM TYPE: Floppy disk  
(B) COMPUTER: IBM PC compatible  
(C) OPERATING SYSTEM: PC-DOS/MS-DOS  
(D) SOFTWARE: PatentIn Release #1.0, Version #1.30

(vi) CURRENT APPLICATION DATA:

(A) APPLICATION NUMBER: US 09/019,441  
(B) FILING DATE: 05-FEB-1998  
(C) CLASSIFICATION:

(vii) PRIOR APPLICATION DATA:

(A) APPLICATION NUMBER: US 08/803,085  
(B) FILING DATE: 20-FEB-1997

(viii) ATTORNEY/AGENT INFORMATION:

(A) NAME: Teskin, Robin L.  
(B) REGISTRATION NUMBER: 35,030  
(C) REFERENCE/DOCKET NUMBER: 012712-502

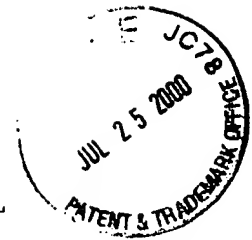
(ix) TELECOMMUNICATION INFORMATION:

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(2) INFORMATION FOR SEQ ID NO:1:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 390 base pairs



(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(ix) FEATURE:

(A) NAME/KEY: CDS  
(B) LOCATION: 1..390

(ix) FEATURE:

(A) NAME/KEY: mat\_peptide  
(B) LOCATION: 58..390

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

ATG GCC TGG ACT CTG CTC CTC GTC ACC CTC CTC ACT CAG GGC ACA GGA	48
Met Ala Trp Thr Leu Leu Leu Val Thr Leu Leu Thr Gln Gly Thr Gly	
-19                      -15                      -10                      -5	
TCC TGG GCT CAG TCT GCC CCG ACT CAG CCT CCC TCT GTG TCT GGG TCT	96
Ser Trp Ala Gln Ser Ala Pro Thr Gln Pro Pro Ser Val Ser Gly Ser	
-1    1                                      5                                      10	
CCT GGA CAG TCG GTC ACC ATC TCC TGC ACT GGA ACC AGC GAT GAC GTT	144
Pro Gly Gln Ser Val Thr Ile Ser Cys Thr Gly Thr Ser Asp Asp Val	
15                                      20                                      25	
GGT GGT TAT AAC TAT GTC TCC TGG TAC CAA CAC CAC CCA GGC AAA GCC	192
Gly Gly Tyr Asn Tyr Val Ser Trp Tyr Gln His His Pro Gly Lys Ala	
30                                      35                                      40                                      45	
CCC AAA CTC ATG ATT TAT GAT GTC GCT AAG CGG GCC TCA GGG GTC TCT	240
Pro Lys Leu Met Ile Tyr Asp Val Ala Lys Arg Ala Ser Gly Val Ser	
50                                      55                                      60	
GAT CGC TTC TCT GGC TCC AAG TCT GGC AAC ACG GCC TCC CTG ACC ATC	288
Asp Arg Phe Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile	
65                                      70                                      75	
TCT GGG CTC CAG GCT GAG GAC GAG GCT GAT TAT TAC TGT TGT TCA TAT	336
Ser Gly Leu Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Cys Ser Tyr	
80                                      85                                      90	
ACA ACC AGT AGC ACT TTG TTA TTC GGA AGA GGG ACC CGG TTG ACC GTC	384
Thr Thr Ser Ser Thr Leu Leu Phe Gly Arg Gly Thr Arg Leu Thr Val	
95                                      100                                      105	
CTA GGT	390
Leu Gly	

110

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 423 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: 1..423

(ix) FEATURE:

- (A) NAME/KEY: mat\_peptide
- (B) LOCATION: 58..423

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

ATG AAA CAC CTG TGG TTC TTC CTC CTC CTG GTG GCA GCT CCC AGA TGG	48
Met Lys His Leu Trp Phe Phe Leu Leu Leu Val Ala Ala Pro Arg Trp	
-19 -15 -10 -5	
GTC CTG TCC CAG CTG CAG CTG CAG GAG TCG GGC CCA GGA GTG GTG AAG	96
Val Leu Ser Gln Leu Gln Leu Gln Glu Ser Gly Pro Gly Val Val Lys	
-1 1 5 10	
CCT TCG GAG ACC CTG TCC CTC ACC TGC GCT GTC TCT GGT GGC TCT GTC	144
Pro Ser Glu Thr Leu Ser Leu Thr Cys Ala Val Ser Gly Gly Ser Val	
15 20 25	
AGC AGT AGT AAC TGG TGG ACC TGG ATC CGC CAG CCC CCA GGG AAG GGA	192
Ser Ser Ser Asn Trp Trp Thr Trp Ile Arg Gln Pro Pro Gly Lys Gly	
30 35 40 45	
CTG GAG TGG ATT GGA CGT ATC TCT GGT AGT GGT GGG GCC ACC AAC TAC	240
Leu Glu Trp Ile Gly Arg Ile Ser Gly Ser Gly Gly Ala Thr Asn Tyr	
50 55 60	
AAC CCG TCC CTC AAG AGT CGA GTC ATC ATT TCA CAA GAC ACG TCC AAG	288
Asn Pro Ser Leu Lys Ser Arg Val Ile Ile Ser Gln Asp Thr Ser Lys	
65 70 75	
AAC CAG TTC TCC CTG AAC CTG AAC TCT GTG ACC GCC GCG GAC ACG GCC	336
Asn Gln Phe Ser Leu Asn Leu Asn Ser Val Thr Ala Ala Asp Thr Ala	

80		85		90	
GTG TAT TAC TGT GCC AGA GAT TGG GCC CAA ATA GCT GGA ACA ACG CTA					384
Val Tyr Tyr Cys Ala Arg Asp Trp Ala Gln Ile Ala Gly Thr Thr Leu					
95		100		105	
GGC TTC TGG GGC CAG GGA GTC CTG GTC ACC GTC TCC TCA					423
Gly Phe Trp Gly Gln Gly Val Leu Val Thr Val Ser Ser					
110		115		120	

(2) INFORMATION FOR SEQ ID NO:3:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 387 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: 1..387

(ix) FEATURE:

- (A) NAME/KEY: mat\_peptide
- (B) LOCATION: 67..387

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

ATG GAC ATG AGG GTC CCC GCT CAG CTC CTG GGG CTC CTT CTG CTC TGG		48
Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Trp		
-22      -20                      -15                      -10		
CTC CCA GGT GCC AGA TGT GAC ATC CAG ATG ACC CAG TCT CCA TCT TCC		96
Leu Pro Gly Ala Arg Cys Asp Ile Gln Met Thr Gln Ser Pro Ser Ser		
-5                      -1      1                      5                      10		
CTG TCT GCA TCT GTA GGG GAC AGA GTC ACC ATC ACT TGC AGG GCA AGT		144
Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser		
15                      20                      25		
CAG GAC ATT AGG TAT TAT TTA AAT TGG TAT CAG CAG AAA CCA GGA AAA		192
Gln Asp Ile Arg Tyr Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys		
30                      35                      40		
GCT CCT AAG CTC CTG ATC TAT GTT GCA TCC AGT TTG CAA AGT GGG GTC		240
Ala Pro Lys Leu Leu Ile Tyr Val Ala Ser Ser Leu Gln Ser Gly Val		

45	50	55	
CCA TCA AGG TTC AGC GGC AGT GGA TCT GGG ACA GAG TTC ACT CTC ACC			288
Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr			
60	65	70	
GTC AGC AGC CTG CAG CCT GAA GAT TTT GCG ACT TAT TAC TGT CTA CAG			336
Val Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln			
75	80	85	90
GTT TAT AGT ACC CCT CGG ACG TTC GGC CAA GGG ACC AAG GTG GAA ATC			384
Val Tyr Ser Thr Pro Arg Thr Phe Gly Gln Gly Thr Lys Val Glu Ile			
	95	100	105
AAA			387
Lys			

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 411 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: 1..411

(ix) FEATURE:

- (A) NAME/KEY: mat\_peptide
- (B) LOCATION: 58..411

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

ATG GAG TTT GGG CTG AGC TGG GTT TTC CTT GTT CCT CTT TTG AAA GGT	48
Met Glu Phe Gly Leu Ser Trp Val Phe Leu Val Pro Leu Leu Lys Gly	
-19 -15 -10 -5	
GTC CAG TGT GAG GTG CAG CTG GTG GAG TCT GGG GGC GGC TTG GCA AAG	96
Val Gln Cys Glu Val Gln Leu Val Glu Ser Gly Gly Leu Ala Lys	
-1 1 5 10	
CCT GGG GGG TCC CTG AGA CTC TGG TGC GCA GCC TCC GGG TTC AGG TTC	144
Pro Gly Gly Ser Leu Arg Leu Trp Cys Ala Ala Ser Gly Phe Arg Phe	

15	20	25	
ACC TTC AAT AAC TAC TAC ATG GAC TGG GTC CGC CAG GCT CCA GGG CAG			192
Thr Phe Asn Asn Tyr Tyr Met Asp Trp Val Arg Gln Ala Pro Gly Gln			
30	35	40	45
GGG CTG GAG TGG GTC TCA CGT ATT AGT AGT AGT GGT GAT CCC ACA TGG			240
Gly Leu Glu Trp Val Ser Arg Ile Ser Ser Ser Gly Asp Pro Thr Trp			
	50	55	60
TAC GCA GAC TCC GTG AAG GGC AGA TTC ACC ATC TCC AGA GAG AAC GCC			288
Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Glu Asn Ala			
	65	70	75
AAC AAC ACA CTG TTT CTT CAA ATG AAC AGC CTG AGA GCT GAG GAC ACG			336
Asn Asn Thr Leu Phe Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr			
	80	85	90
GCT GTC TAT TAC TGT GCG AGC TTG ACT ACA GGG TCT GAC TCC TGG GGC			384
Ala Val Tyr Tyr Cys Ala Ser Leu Thr Thr Gly Ser Asp Ser Trp Gly			
	95	100	105
CAG GGA GTC CTG GTC ACC GTC TCC TCA			411
Gln Gly Val Leu Val Thr Val Ser Ser			
110	115		

(2) INFORMATION FOR SEQ ID NO:5:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 41 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

ATCACAGATC TCTACCATG GACATGAGGG TCCCCGCTCA G 41

(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 35 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

ATCACAGATC TCTCACCATG AGGCTCCCTG CTCAG

35

(2) INFORMATION FOR SEQ ID NO:7:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 35 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 24
- (D) OTHER INFORMATION: /note= "Nucleotide 24 is N wherein N = A/G."

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 32
- (D) OTHER INFORMATION: /note= "Nucleotide 32 is N wherein N = T/G."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

ATCACAGATC TCTCACCATG GAANCCCCAG CNCAG

35

(2) INFORMATION FOR SEQ ID NO:8:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 38 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

ATCACAGATC TCTCACCATG GTGTTGCAGA CCCAGGTC

38

(2) INFORMATION FOR SEQ ID NO:9:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 29 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 24
- (D) OTHER INFORMATION: /note= "Nucleotide 24 is N wherein

N = C/T."

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 29
- (D) OTHER INFORMATION: /note= "Nucleotide 29 is N wherein

N = G/C."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

GGTGCAGCCA CCGTAGCTTT GATNTCCAN

29

(2) INFORMATION FOR SEQ ID NO:10:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 34 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 21
- (D) OTHER INFORMATION: /note= "Nucleotide 21 is N wherein

N = G/A."

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 26
- (D) OTHER INFORMATION: /note= "Nucleotide 26 is N wherein

N = G/C."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

ATCACAGATC TCTCACCATG NCCTGNTCCC CTCT

34



(2) INFORMATION FOR SEQ ID NO:11:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 34 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 27
- (D) OTHER INFORMATION: /note= "Nucleotide 27 is N wherein

N = A/G."

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 31
- (D) OTHER INFORMATION: /note= "Nucleotide 31 is N wherein

N = T/C."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

ATCACAGATC TCTCACCATG GCCTGGNCTC NGCT

34

(2) INFORMATION FOR SEQ ID NO:12:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 35 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 23
- (D) OTHER INFORMATION: /note= "Nucleotide 23 is N wherein

N = A/C."

(ix) FEATURE:

- (A) NAME/KEY: misc\_feature
- (B) LOCATION: 29
- (D) OTHER INFORMATION: /note= "Nucleotide 29 is N wherein

N = T/C."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

ATCACAGATC TCTCACCATG GCNTGGANCC CTCTC

35

(2) INFORMATION FOR SEQ ID NO:13:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 21 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

CTTGGGCTGA CCTAGGACGG T

21

(2) INFORMATION FOR SEQ ID NO:14:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 30 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

GCGACTAAGT CGACCATGGA CTGGACCTGG

30

(2) INFORMATION FOR SEQ ID NO:15:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 30 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

GCGACTAAGT CGACCATGAA ACACCTGTGG

30

(2) INFORMATION FOR SEQ ID NO:16:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 33 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

GCGACTAAGT CGACCATGGA GTTTGGGCTG AGC

33

(2) INFORMATION FOR SEQ ID NO:17:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 33 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

GCGACTAAGT CGACCATGGG GTCAACCGCC ATC

33

(2) INFORMATION FOR SEQ ID NO:18:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 33 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

GCGACTAAGT CGACCATGTC TGTCTCCTTC CTC

33

(2) INFORMATION FOR SEQ ID NO:19:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 46 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

GCCAGGGGGA AGACCGATGG GCCCTTGGTG CTAGCTGAGG AGACGG

46

(2) INFORMATION FOR SEQ ID NO:20:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

GATGGGCCCT TGGTGCTAGC TGAGGAGACG G

31

(2) INFORMATION FOR SEQ ID NO:21:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 51 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

GGTGCTAGCT GAGGAGACGG TGACCAGGAC TCCCTGGCCC CAGAAGCCTA G

51

(2) INFORMATION FOR SEQ ID NO:22:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

ATTTAGGTGA CACTATA

17

(2) INFORMATION FOR SEQ ID NO:23:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 16 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

GTTTTCCCAG TCACGA

16

(2) INFORMATION FOR SEQ ID NO:24:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 20 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

ATATACGACT CACTATAGGG

20

(2) INFORMATION FOR SEQ ID NO:25:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 24 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:

CCGTCAGATC GCCTGGAGAC GCCA

24

(2) INFORMATION FOR SEQ ID NO:26:

- (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:

GCAGTTCCAG ATTTC AACTG

20

(2) INFORMATION FOR SEQ ID NO:27:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 21 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:

CCAGGCCACT GTCACGGCTT C

21

(2) INFORMATION FOR SEQ ID NO:28:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 20 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

CAGAGCTGGG TACGTCCTCA

20

(2) INFORMATION FOR SEQ ID NO:29:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 20 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:

GCCCCCAGAG GTGCTCTTGG

20

(2) INFORMATION FOR SEQ ID NO:30:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:30:

ACACAGACCC GTCGACATGG

20

(2) INFORMATION FOR SEQ ID NO:31:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:31:

GCTCTCGGAG GTGCTCCTGG

20

(2) INFORMATION FOR SEQ ID NO:32:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 30 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:32:

ACAGACCCGT CGACCATGGA GTTTGGGCTG

30

(2) INFORMATION FOR SEQ ID NO:33:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 27 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:33:

CCCCTTGGTG CTAGCTGAGG AGACGGT

27

(2) INFORMATION FOR SEQ ID NO:34:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 27 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:34:

AGAGAGAACG CCAAGAACAC ACTGTTT

27

(2) INFORMATION FOR SEQ ID NO:35:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 27 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:35:

AAACAGTGTG TTCTTGCGT TCTCTCT

27

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